

Case report



Rivaroxaban induced retro peritoneal hematoma: a rare complication of direct oral anticoagulants (DOACs)

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Rivaroxaban induced retro peritoneal hematoma: a rare complication of direct oral anticoagulants (DOACs)

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Abstract

Direct oral anticoagulants have revolutionized the management of patients requiring long-term anticoagulation, as they are easy to handle, do not require biological monitoring, the dosage is standardized and hemorrhagic events are rare. Hemorrhagic events under this type of anticoagulation are rare and may involve several locations. We are going to present the case of a patient followed for non-valvular atrial fibrillation on rivaroxaban who presented to the emergency department with intense left lumbar pain with hemodynamic instability, and whose investigations came back in favor of a retroperitoneal hematoma, this type of hemorrhagic event related to rivaroxaban, to our knowledge and the first in the

literature, we are going to present the case of this patient by detailing the management and the difficulties envisaged during her management.

Introduction

Direct oral anticoagulants have been a revolution in the field of anticoagulation since their first appearance. They are an effective and easy-to-manage treatment for patients who require long-term anticoagulation with minimal risk of bleeding compared to other methods [1,2]. We will present the case of a patient undergoing follow-up for atrial fibrillation on rivaroxaban who was admitted to the emergency department with hemodynamic instability and whose investigations found a large retroperitoneal hematoma of renal origin.

Patient and observation

A 67-year-old patient with a history of type 2 diabetes on insulin, hypertension on amlodipine, non-valvular atrial fibrillation initially put on Acenocumarol with poor compliance complicated by a subdural hematoma for which the patient was operated, then switched to Rivaroxaban. He was presented to the emergency department with left lower back pain. The history of the disease dates back to one day before admission following the sudden onset of severe low back pain associated with vomiting, leading to an emergency department visit. Clinical examination on admission found a conscious patient, well oriented in time and space, with significant abdominal distension with signs of shock, including tachycardia at 135 bpm, BP: 84/52 mmHg and coldness, and mottling of the extremities. Besides, respiratory rate was 25 c/min with pulse oximetry 96% on room air. We performed a check-up that showed Hb at 9.2 g/dl, platelets at 256,000, TP at 14% and CRP at 7mg/l, so the patient was transfused with 4 bags of RBCs and 8 of FFPs as well as prothrombin complex concentrates at a dosage of 50 IU/Kg with the introduction of norepinephrine to maintain good organ perfusion. Given this clinical picture and after stabilization of the patient, an injected abdominal

CT scan was performed which revealed a large retroperitoneal hematoma (Figure 1). Without surgical indication according to the surgeons, the patient was transferred to the intensive care unit for further management, the remaining laboratory tests showed the presence of acute renal failure with urea at 0.82 g/l and creatinine at 16mg/l. The evolution was marked by a transitory stabilization followed by a worsening of the patient's hemodynamic and respiratory status due to the enormous abdominal distension which led to intubation. The control tests showed a persistent decline in hemoglobin and platelet levels due to the bleeding and it was therefore decided to carry out diagnostic and therapeutic arteriography to ensure hemostasis. The arteriography performed showed bleeding of renal origin, probably due to a tumor process, and so the left renal artery was embolized to ensure hemostasis (Figure 2). The patient stabilized after the procedure for a short time, but her condition continued to worsen and several failures occurred, notably hemodynamic, renal, hematological, and hepatic. The patient died 3 days later in a state of permanent shock with multi-visceral failure.

Discussion

Direct oral anticoagulants are a hot topic in the medical field, their advent has revolutionized the management of patients requiring long-term anticoagulation, and their field of use is constantly expanding, as they are easy to prescribe and do not require biological monitoring and, above all, they have a minimal risk of bleeding compared to other means, which varies between 13 and 19%, and this risk is much lower in patients on Apixaban and Dabigatran compared to patients on Rivaroxaban [3]. DOACs-related bleeding events are rare complications, and their management is even more difficult. Given the cost and unavailability of the antagonist of these products [4,5]. Several cases of retroperitoneal hematomas have been described in the literature, the etiologies are multiple whether traumatic, iatrogenic, or spontaneous. To our knowledge, this

is the first case of spontaneous retroperitoneal hematoma following an accident with DOACs, notably rivaroxaban. There is a case of retroperitoneal hematoma in a patient treated with rivaroxaban reported by Deekonda *et al.* [6]; however, this occurred after anterior lumbar interbody fusion “ALIF” surgery, whereas the case of our patient corresponds to spontaneous bleeding from a probable tumor process, given the differentiated appearance of the kidney on imaging. The management of this type of bleeding does not differ from the standardized management of retroperitoneal hematomas; embolization remains the treatment of choice in stable or stabilized forms [7]. In the case of our patient, we could not specifically antagonize rivaroxaban due to the unavailability of Andexanet alfa, so we used FFP and PCC with blood transfusion to replace the blood loss, surgery was not an optimal option according to the surgeons. That is why, after stabilizing the patient, we opted for embolization which allowed the bleeding to stop, but unfortunately this was not enough to save the patient as her state of shock became permanent and was complicated by several organ failures.

Conclusion

Given the increasing use of DOACs, it seems judicious to establish standardized protocols according to the means available in different countries and structures to manage hemorrhagic accidents. Thus, when a patient is on DOACs and presents with a state of shock with no other obvious causes, it is necessary to think first of all of the hemorrhagic origins and to treat it before the organ failure occurs.

Competing interests

The authors declare no competing interests.

Authors' contributions

AB and AG examined the patient and drafted the manuscript. HB and AJ evaluated the neuroimaging

findings and gave important clinical opinions. CC and MK participated in the design of the case report and helped to draft the manuscript. All authors read and approved the final manuscript.

Figures

Figure 1: an abdominal CT scan showing a large left retroperitoneal hematoma

Figure 2: an arteriogram of the left kidney showing: A) multiple hemorrhagic sites; B) embolization of the left renal artery which stopped the bleeding

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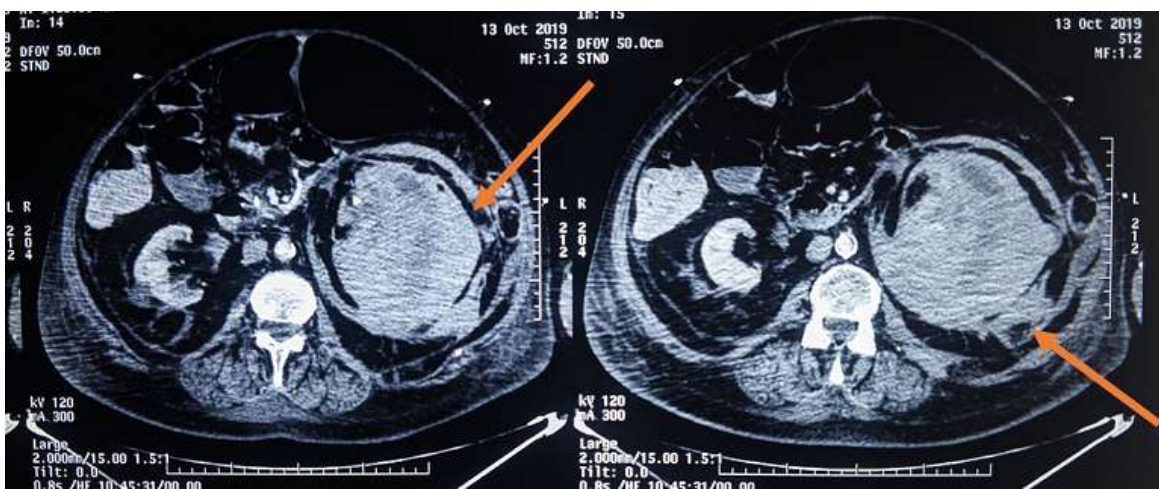


Figure 1: an abdominal CT scan showing a large left retroperitoneal hematoma

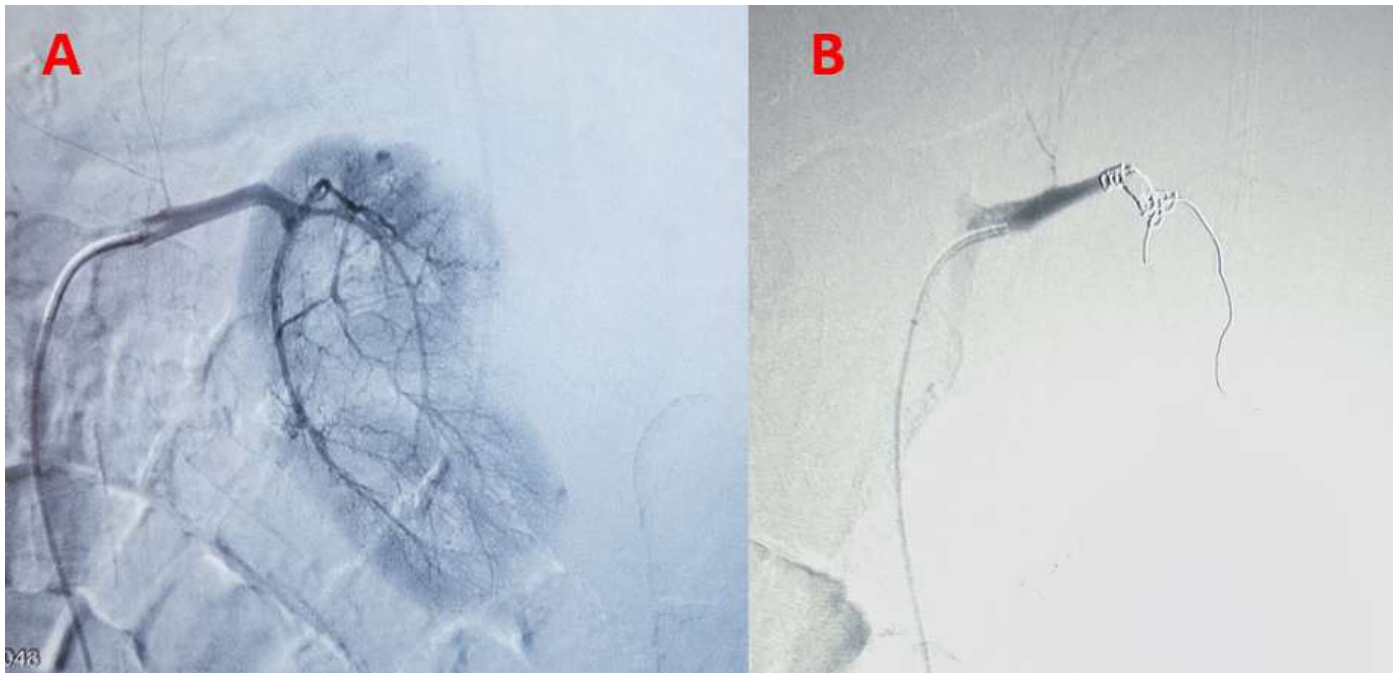


Figure 2: an arteriogram of the left kidney showing: A) multiple hemorrhagic sites; B) embolization of the left renal artery which stopped the bleeding